

ABSTRACT

A magnetoresistive device substructure includes: a TMR element; a bias field inducing layer that covers the TMR element; and a front flux probe layer formed on the field inducing layer and introducing a signal flux to the TMR element. The substructure further includes: a dummy element; a dummy bias field inducing layer; and a dummy front flux probe layer. The dummy field inducing layer is located off the position of the dummy element. Alignment of the dummy field inducing layer and the dummy element allows alignment of the TMR element and the field inducing layer.